

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1 1. (Currently Amended) A hand-held assay device
2 for measuring the presence of a sample selected from the
3 group consisting of ATP and other entity capable of
4 generating chemiluminescence, comprising:

5 a housing for enclosing the sample in a single
6 compartment so that the sample is inside the housing in
7 the absence of a source of light from outside of the
8 housing;

9 a first light sensor inside the housing for
10 generating a sample signal in response to detecting the
11 chemiluminescence;

12 a second light sensor inside the housing
13 shielded from the chemiluminescence and generating a
14 reference signal; and

15 a controller inside the housing receiving the
16 sample and reference signal to output a resulting signal
17 indicative of the sample and determined as the difference
18 between the sample and reference signals.

1 2. (Original) The hand-held assay device
2 defined in claim 1, wherein the first and second light
3 sensors are photodiodes, the hand-held device further
4 comprising sample and reference switched integrators,

5 each connected in series with the respective one of the
6 photodiodes and outputting integrated values of the
7 sample and reference signals received by the controller,
8 the reference signal being generated in response to
9 environmental changes selected from the group consisting
10 of temperature, humidity, external shocks and a
11 combination thereof.

1 3. (Original) The hand-held assay device
2 defined in claim 2, wherein each of the integrators is
3 provided with a respective integration bypass capacitor
4 and a solid state switch connected in parallel to one
5 another to provide the integrated values of the sample
6 signal and the reference signal.

1 4. (Currently Amended) The hand-held assay
2 device defined in claim 1 wherein the controller is a
3 microprocessor having a memory which stores a sample
4 threshold value, the hand-held device further comprising
5 software executing on the microprocessor for closing the
6 solid sate switches for a controllable integration time
7 to provide the integrated values of the sample and
8 reference signals corresponding to the duration of the
9 closed state of the solid state switches, and software
10 for comparing a value representing the resulting signal
11 to the sample threshold value to determine the sample if

12 the resulting signal is at least equal to the sample
13 threshold value.

1 5. (Original) The hand-held assay device
2 defined in claim 4, further comprising software executed
3 on the controller for incrementally increasing the
4 integration time if the resulting signal is less than the
5 sample threshold value.

1 6. (Original) The hand-held assay device
2 defined in claim 5, further comprising software executed
3 on the controller for completing the determination of the
4 sample upon reaching a predetermined integration time
5 limit stored in the memory, and software executed on the
6 controller for detecting negative saturation of the
7 switched integrator due to a rapid environmental change
8 and for setting an integration time limit shorter than
9 the predetermined time limit.

1 7. (Original) The hand-held assay device
2 defined in claim 1, further comprising a pair of analog
3 to digital converters digitizing the sample and reference
4 signals, respectively, and software executed on the
5 controller for subtracting the digitized reference signal
6 from the digitized sample signal.

1 8. (Currently Amended) The hand-held assay
2 device defined in claim 1, further comprising software
3 executed on the controller for calculating a logarithmic
4 number of the resulting signal and a display for
5 displaying the calculated logarithmic number if
6 calculated resulting signal exceeds ~~the~~ a threshold
7 value.

1 9. (Currently Amended) The hand-held assay
2 device defined in claim 1, further comprising an LED
3 turned on in response to powering up the device to emit
4 a beam of light extending along a path, a transparent
5 window along the path between the LED and the first light
6 sensor, the controller having a calibration mode, wherein
7 the cleanliness of the window is controlled in response
8 to a signal generated by the first ~~first~~ light sensor
9 which is struck by the beam from the LED.

1 10. (Original) The hand-held assay device
2 defined in claim 9, further comprising software executed
3 on the controller for turning the LED on in response to
4 powering up of the hand-held device, software executed on
5 controller for measuring the signal representing light
6 intensity of the light beam penetrating through the
7 transparent window, and a comparator for providing a
8 calibration value if the measured signal is within an
9 expected intensity range of an LED reference signal
10 stored in the memory.

1 11. (Original) The hand-held assay device
2 defined in claim 10, further comprising software executed
3 on the controller for adjusting the resulting signal
4 indicative of the sample presence for the calibration
5 value.

1 12. (Currently amended) The hand-held assay
2 device defined in claim 1, further comprising the a
3 sample compartment having a ~~the~~ transparent window
4 upstream from the first light sensor and a door spaced
5 from the window, a ~~the~~ consumable for generating the
6 chemiluminescence in the presence of the sample, which
7 has been used to swipe a surface to collect the sample to
8 be tested, being removably inserted through the door into
9 the sample compartment to bring the sample towards the

10 window..

1 13. (Currently Amended) The hand-held assay
2 device defined in claim 12 wherein a ~~the~~ LED is pressed
3 in a peripheral wall of the sample compartment and spaced
4 from the transparent window.

1 14. (Currently Amended) The hand-held device
2 defined in claim 12 wherein the consumable is positioned
3 in the sample compartment to block the beam of light
4 emitted by the LED, the device further comprising
5 software executed on the controller for preventing the
6 device from operating in response to a signal indicative
7 of an ~~the~~ open door.

1 15. (Currently Amended) The hand--held assay
2 device defined in claim 1, wherein the controller has a
3 ~~consumable~~ detection mode for a consumable for
4 generating the chemiluminescence in the presence of the
5 sample, wherein software is executed on the controller
6 for detecting whether a signal inputted in the controller
7 is within a predetermined range of intensity, which has
8 low, mid and high levels and for determining if this
9 signal is indicative of the presence of the consumable in
10 the sample compartment.

1 16. (Currently Amended) The hand-held assay
2 device defined in claim 15, further comprising software
3 executed on the controller for turning a ~~the~~ LED on, and
4 software executed on a ~~the~~ microprocessor for outputting
5 an integrating value of the signal indicative of the
6 presence of the consumable if the integrating value is at
7 least equal to the high level exceeding NL_{exp} , wherein L_{exp}
8 is the stored LED reference value and N is a
9 predetermined integer.

1 17. (Currently amended) The hand-held assay
2 device defined in Claim 15, further comprising software
3 executed on the controller for turning a ~~the~~ LED off if
4 the value of the signal inputted in the controller has
5 been determined to be at least equal to the mid-level but
6 less than the high level of the predetermined range with
7 the LED on, wherein the mid-level corresponds to a ~~the~~
8 stored LED reference value, software executed on the
9 controller for determining a new integrated value of the
10 signal detected in response to turning the LED off, and
11 software executed on the controller for comparing the
12 integrated values L1 and L2 with the LED on and the LED
13 off, respectively, to display the signal indicative of
14 the presence of the consumable if these integrated values
15 are substantially the same.

1 18. (Currently amended) The hand-held assay
2 device defined in claim 15, further comprising software
3 executed on the controller for comparing the signal
4 inputted in the controller with a ~~the~~ LED off to the low
5 level of the predetermined range and displaying a warning
6 signal indicative of the absence of the consumable if the
7 integrated value of the inputted signal is below the low
8 level.

1 19. (Currently amended) The hand-held assay
2 device defined in claim 15, further comprising software
3 executed on the controller for turning a ~~the~~ LED off,
4 said signal being indicative of the presence of the
5 consumable in response to determining an integrated value
6 of the signal if the determined value is at least equal
7 to the mid-level of the predetermined range.

1 20. (Original) The hand-held assay device
2 defined in claim 19, further comprising software executed
3 on the controller for determining whether the signal is
4 at least equal to the low level of the predetermined
5 range, software executed on the controller for turning
6 the LED on in response to detection of the low level,
7 software executed on the controller for determining an
8 integrated value of the signal after the LED has been
9 turned on, and software for comparing the values of the
10 resulting signal with the LED off and on, respectively,
11 to display the signal indicative of the presence of the
12 consumable if the determined values are substantially the
13 same.

1 21. (Currently amended) The hand-held assay
2 device defined in claim 1, further comprising software
3 executed on the controller for measuring first and second
4 values of a signal processed by the controller with a the
5 LED on and off, respectively, software for subtracting
6 second value from the first value, and software for
7 outputting the signal indicative of the absence of the
8 consumable if the difference is between a high-level and
9 a low level of the predetermined range stored in the
10 memory.

1 22. (Currently amended) The hand-held assay
2 device defined in claim 2, further comprising software
3 executed on the controller for closing/opening ~~the~~ solid
4 state switches before determining the resulting signal
5 indicative of the sample presence to short ~~the~~
6 integration feedback capacitors for discharging
7 accumulated photodiode charge.

1 23. (Original) The hand-held assay device
2 defined in claim 10 wherein the transparent window is
3 made from glass.

1 24. (Original) The hand-held assay device
2 defined in claim 23 wherein one of the opposite sides of
3 the window is coated with a coating of an optically
4 transparent, conductive material to minimize the direct
5 injection of charge during introduction of the sample
6 into the sample compartment.

1 25. (Currently amended) The hand-held assay
2 device defined in claim 24 wherein the coating is indium
3 tin-oxide (ITO) placed on the side of the window, which
4 faces away from a ~~the~~ first photodiode, to form with a
5 chassis of the hand-held device a discharging element
6 acting as a Faraday cage, the opposite side of the window
7 being covered with a filter to limit the light striking
8 the first photodiode.

1 26. (Original) The hand-held assay device
2 defined in claim 23 wherein the window is made from a
3 colored glass to serve as a filter selected from the
4 group consisting of a band pass filter, band-limited
5 filter and combination of these.

1 27. (Currently amended) The hand-held assay
2 device defined in claim 24 wherein the coating is placed
3 on a side of the window facing a ~~the~~ first photodiode,
4 whereas the other side of the window is covered with a
5 filter.

1 28. (Currently amended) The hand-held device
2 defined in claim 12 wherein the transparent window is
3 spaced from the bottom of the consumable, which is made
4 of conductive plastic, the hand-held ~~hand-held~~ device
5 further comprising an optic including a pair of plano-
6 convex lens between the consumable and the transparent
7 window.

1 29. (Currently amended) The hand-held device
2 defined ~~defined~~ in claim 12 further comprising software
3 executed on the controller for determining the presence
4 of holes in the door and for generating a warning signal
5 in response to the detection of the holes.

1 30. (Currently amended) A hand-held assay
2 device for detecting the presence of a sample selected
3 from the group consisting of ATP and other entity capable
4 of chemically reacting to generate chemiluminescence,
5 comprising:

6 a housing provided with a sample compartment
7 for enclosing the sample so as to generate the
8 chemiluminescence in the sample compartment so that the
9 sample is inside the housing in absence of a source of
10 light from outside of the housing;

11 a detection assembly inside ~~in~~ the housing for
12 detecting the chemiluminescence and generating a signal

13 in response to its detection;

14 a transparent window inside the housing between
15 a the sample chamber and detection assembly, said
16 transparent window being covered with a conductive
17 transparent coating to minimize the direct injection of
18 static charge; and

19 a controller inside the housing for determining
20 whether a resulting signal processed in response to the
21 signal generated by the detection assembly is indicative
22 of the presence of the sample.

1 31. (Original) The hand-held assay device
2 defined in claim 30 further comprising a chassis made of
3 a conductive material and in contact with the coating to
4 ct as a Faraday cage.

1 32. (Original) The hand-held assay device
2 defined in claim 30 wherein the conductive coating is
3 indium tin-oxide (ITO).

1 33. (Original) The hand-held assay device
2 defined in claim 30 wherein the detection assembly
3 comprises:

4 a first photodiode generating a sample signal
5 in response to chemiluminescence;

6 a second photodiode shielded from the
7 chemiluminescence and generating a reference signal;

8 a sample and reference switched integrators,
9 each connected in series with the respective one of the
10 first and second photodiodes and outputting integrated
11 values of the sample and reference signals received by
12 the controller, the reference signal being generated in
13 response to environmental changes selected from the group
14 consisting of temperature, humidity and a combination
15 thereof, and

16 software executed on the controller for
17 subtracting the integrated value of the sample signal
18 from the integrated value of the sample signal to
19 determine the resulting signal.

1 34. (Currently amended) The hand-held assay
2 device defined in claim 30 wherein the transparent window
3 has opposite sides, one of which is coated with an ~~the~~
4 ITO providing a shutterless structure of the hand-held
5 device, whereas the other side of the transparent window
6 has a bandpass filter selected from the group consisting
7 of a coating and a whole body.

1 35. (Currently amended) The hand-held assay
2 device defined in claim 30 wherein a ~~the~~ first photodiode
3 is juxtaposed with the side of the transparent window
4 provided with a ~~the~~ bandpass filter.

1 36. (Currently amended) The hand-held assay
2 device defined in claim 30, further comprising an LED
3 mounted in the sample compartment to emit a beam of light
4 projecting through the window and striking a ~~the~~ first
5 photodiode which generates a signal, and software
6 executed on the controller for comparing the signal
7 generated by the first photodiode to an LED reference
8 value to provide a calibration value indicative of the
9 cleanliness of the transparent window and accounted for
10 during the measurement of the resulting signal.

1 37. (Original) The hand-held assay device
2 defined in claim 30, further comprising a consumable
3 removably inserted in the sample compartment after
4 collecting the sample, and software executed on the
5 controller for detecting the presence of the consumable
6 in the sample compartment.

1 38. (Original) The hand-held assay device
2 defined in claim 33 wherein each of the integrators is
3 provided with a respective integration bypass capacitor
4 and a solid state switch connected in parallel to one
5 another to provide the integrated values of the sample
6 signal and the reference signal, the hand-held device
7 further comprising software executed on the controller
8 for opening/closing the solid state switches before
9 measuring the resulting signal to discharge accumulated
10 static charges.

1 39. (Currently amended) A hand-held assay
2 device for detecting the presence of a sample selected
3 from the group consisting of ATP and other entity capable
4 of chemically reacting to generate chemiluminescence,
5 comprising:

6 a housing provided with a sample compartment
7 receiving the sample;

8 a source of light mounted in the housing and

9 emitting a beam of light extending along a path;

10 a detection assembly along the path for
11 generating a resulting signal in response to the
12 chemiluminescence;

13 a transparent window along the path between a
14 ~~the~~ sample chamber and the detection assembly, the
15 detection assembly generating a calibration signal
16 indicating cleanliness of the transparent window in
17 response to being struck by the beam of light from the
18 source; and

19 a controller having an analytical mode, wherein
20 the resulting signal is evaluated, and a calibration
21 mode, wherein the calibration signal is evaluated.

1 40. (Original) The hand-held assay device
2 defined in claim 39 wherein the detection assembly
3 comprises:

4 a first photodiode generating a sample signal
5 in response to chemiluminescence;

6 a second photodiode shielded from the
7 chemiluminescence and generating a reference signal;

8 a sample and reference switched integrators,
9 each connected to the respective one of the first and
10 second photodiodes and outputting integrated values of
11 the sample and reference signals received by the
12 controller, the reference signal being generated in

13 response to environmental changes selected from the group
14 consisting of temperature, humidity and a combination
15 thereof,

16 software executed on the controller in the
17 analytical mode for subtracting the integrated value of
18 the sample signal from the value of the sample signal to
19 determine an integrating value of the resulting signal,
20 and

21 software executed on the controller for
22 comparing the integrating value of the resulting signal
23 to a sample threshold and for outputting the integrating
24 value of the resulting signal if the value of the
25 resulting signal is at least equal to the sample
26 threshold.

1 41. (Original) The hand-held assay device
2 defined in claim 39 wherein the source of light is an LED
3 pressed in a peripheral wall of the sample compartment,
4 said controller being provided with software for
5 comparing the measured calibration signal with a
6 reference calibration signal and displaying an error
7 signal if the measured calibration signal is not within
8 the expected range of the reference calibration signal.

1 42. (Original) The hand-held device defined in
2 claim 40, further comprising software executed on the
3 controller for adjusting the resulting signal for the
4 calibration signal if the latter is being within the
5 expected range of the reference calibration signal.

1 43. (Original) A hand-held assay device for
2 detecting the presence of a sample selected from the
3 group consisting of ATP and other entity capable of
4 chemically reacting to generate chemiluminescence,
5 comprising:

6 a housing provided with a sample compartment;
7 a consumable collecting the sample and
8 removably inserted into the sample compartment;

9 a detection assembly located in the housing
10 along the path and juxtaposed with the consumable upon
11 insertion of th consumable into the sample compartment,
12 the detection assembly generating a resulting signal in
13 response to the chemiluminescence and generating a
14 consumable-present signal in response to detecting the
15 consumable; and

16 a controller having an analytical mode, wherein
17 the resulting signal is evaluated, and a detection mode,
18 wherein the consumable-present signal is evaluated.

1 44. (Original) The hand-held device defined in
2 claim 42, further comprising software executed on the
3 controller for comparing the resulting signal with a
4 predetermined threshold and for outputting a signal
5 indicative of the presence of the sample if the resulting
6 signal is at least equal to the predetermined threshold.

1 45. (Original) The hand-held assay device
2 defined in claim 42 wherein the detection assembly
3 comprises:

4 a first photodiode generating a sample signal
5 in response to the chemiluminescence;

6 a second photodiode shielded from the
7 chemiluminescence and generating a reference signal;

8 sample and reference switched integrators, each
9 connected to the respective one of the first and second
10 photodiodes and outputting integrated values of the
11 sample and reference signals received by the controller,
12 the reference signal being generated in response to
13 environmental changes selected from the group consisting
14 of temperature, humidity and a combination thereof.

1 46. (Original) The hand-held assay device
2 defined in claim 42, further comprising a source of light
3 mounted in the sample compartment, and software executed
4 on the controller for comparing the consumable-present
5 signal with high, mid and low level values of an expected
6 intensity of the light from the source of light.

1 47. (Currently amended) The hand-held device
2 defined in claim 45, further comprising software executed
3 on the controller in a ~~the~~ detection mode for turning a
4 ~~the~~ source of light on and software for determining a
5 signal generated by the detection assembly in response to
6 the turning the source of light off.

1 48. (Original) The hand-held device defined in
2 claim 46, further comprising software executed on the
3 controller for turning he source of light on and for
4 determining a signal generated by the detection assembly
5 in response to turning the source of light on, software
6 executed on the controller for subtracting the determined
7 signal with the source of light off from the determined
8 signal of the source of light off to calculate the
9 difference between the determined signals.

1 49. (Currently amended) The hand-held device
2 defined in claim 47, further comprising software executed
3 on the controller for outputting a signal indicative of
4 the absence of a ~~the~~ consumable in the sample compartment
5 if the difference between the determined signals is
6 within a predetermined range having a low level and a
7 high level, wherein the low level corresponds to the
8 reference signal generated by the second photodiode, and
9 the high level correspond to a signal representing the
10 expected intensity of the source of light.

1 50. (Currently amended) A hand-held assay
2 device for detecting the presence of a sample selected
3 from the group consisting of ATP and other entity capable
4 of chemically reacting to generate chemiluminescence,
5 comprising:

6 a housing ~~housing~~ provided with a sample
7 compartment;

8 a consumable adapted to be removably inserted
9 in the sample compartment after collecting the sample,
10 the sample compartment being provided with a transparent
11 bottom;

12 a source of light provided in the sample
13 compartment and emitting a beam of light which projects
14 through the transparent bottom;

15 a detection assembly juxtaposed with the

16 transparent bottom for generating a first signal in
17 response to detection of the chemiluminescence and a
18 second signal in response to being struck by the beam of
19 light; and

20 a controller receiving the first and second
21 signals and having a first mode, wherein the first signal
22 is evaluated to determine ~~determined~~ the presence of the
23 sample, a second mode, wherein the second signal is
24 evaluated to determine the cleanliness of the transparent
25 bottom, and a third mode, wherein the second signal is
26 determined to be indicative of the presence of the
27 consumable.

1 51. (Original) The hand-held device defined in
2 claim 49 wherein the detection assembly comprises:

3 a first photodiode generating a sample signal
4 in response to the detection of the chemiluminescence;

5 a second photodiode shielded from the
6 chemiluminescence and generating a reference signal;

7 sample and reference switched integrators, each
8 connected to the respective one of the first and second
9 photodiodes and outputting integrated values of the
10 sample and reference signals received by the controller,
11 the reference signal being generated in response to
12 environmental changes selected from the group consisting
13 of temperature, humidity and a combination thereof.

1 52. (Currently amended) The hand-held device
2 defined in claim 49, further comprising software executed
3 on the controller in a the first mode for subtracting the
4 integrated value of the reference signal from the
5 integrating value of the sample signal to determine a
6 value of the first signal, and software executed on the
7 controller for comparing the value of the first signal to
8 a predetermined threshold to output a signal indicative
9 of the presence of the sample if the value of the first
10 signal is at least equal to the predetermined threshold.

1 53. (Currently amended) The hand-held device
2 defined in claim 49 further comprising software executed
3 on the controller working in a the second mode for
4 turning the source of light, and software executed on the
5 controller for comparing a the second signal with a
6 reference signal representing the expected intensity of
7 the source of light, and software executed on the
8 controller for displaying a warning signal if the second
9 signal is beyond the expected intensity range of the
10 source of light.

1 54. (Currently amended) The hand-held device
2 defined in claim 52 wherein the expected intensity range
3 of the source of light having low and high levels, the
4 hand-held device further comprising software executed on
5 the controller for comparing a ~~the~~ second signal with the
6 high level to detect the presence of the consumable if
7 the second signal exceeds the high intensity level at a
8 predetermined value, and software for switching the
9 controller from a the third mode to the first mode in
10 response to the detection of the consumable.

1 55. (Currently amended) The hand-held device
2 defined in claim 52 the hand-held device further
3 comprising software executed on the controller for
4 switching the controller from a ~~the~~ third mode to the
5 first mode if a ~~the~~ second signal is above the high
6 intensity level at a predetermined value to indicate the
7 presence of the consumable in the sample compartment.

1 56. (Original) The hand-held assay device
2 defined in claim 49 wherein the transparent bottom having
3 opposite sides, one of which is coated with an ITO to
4 provide a shutterless structure of the hand-held device.

1 57. (Original) A method of measuring the
2 presence of a sample selected from the group consisting

3 of ATP and other entity capable of generating
4 chemiluminescence, comprising the steps of:

5 providing a first photodiode for generating a
6 sample signal in response to detecting the
7 chemiluminescence;

8 providing a second photodiode shielded from the
9 chemiluminescence for generating a reference signal;

10 providing a controller receiving the sample and
11 reference signal for subtracting the reference signal
12 from the sample signal to determine a resulting signal;
13 and

14 comparing the resulting signal with a
15 predetermined threshold; and

16 displaying the resulting signal indicative of
17 the sample if the resulting signal is at least equal to
18 the threshold value.

1 58. (Original) A method for detecting the
2 presence of a sample selected from the group consisting
3 of ATP and other entity capable of chemically reacting to
4 generate chemiluminescence, comprising the steps of:

5 providing a housing having a sample compartment
6 formed with a transparent bottom;

7 detecting the chemiluminescence and generating
8 a signal in response to the detection;

9 providing a film of a conductive plastic

10 material on the transparent bottom, thereby minimizing
11 the direct injection of static charge; and
12 comparing the signal with a predetermined
13 threshold; and
14 displaying a value of the signal if the signal
15 is at least equal to the predetermined threshold.

1 59. (Original) A method for detecting the
2 presence of a sample selected from the group consisting
3 of ATP and other entity capable of chemically reacting to
4 generate chemiluminescence, said sample being placed in
5 a sample compartment provided in a housing, comprising
6 the steps of:

7 generating a sample signal in response to
8 detecting the chemiluminescence;

9 generating a reference signal in response to
10 detecting environmental changes selected from the group
11 consisting of humidity, temperatures drifts and a
12 combination thereof;

13 integrating the sample and reference signals
14 during a controllable integration period to produce
15 integrated values of the sample and reference signals;

16 digitizing the integrated values of the sample
17 and reference signals;

18 subtracting the digitized value of the
19 reference signal from the digitized value of the sample

20 signal to determine a value of a resulting signal;
21 comparing the value of the resulting signal
22 with a predetermined threshold and displaying the
23 resulting signal indicative of the presence of the sample
24 if the value of the resulting signal is at least equal to
25 the threshold.

1 60. (Original) The method defined in claim 57
2 further comprising the step of incrementally increasing
3 the integration time if the resulting signal is less than
4 the threshold, and of monitoring the integration time to
5 prevent further detection of the sample and reference
6 signals if the integration time has reached a
7 predetermined limit.

1 61. (Original) The method defined in claim 57,
2 further comprising the step of detecting a consumable
3 containing the sample in the sample compartment, sample
4 compartment being provided with a transparent bottom.

1 62. (Original) The method defined in claim 59,
2 further comprising the step of determining the
3 cleanliness of the transparent bottom before determining
4 the resulting signal.

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Amendments to the Drawings

Enclosed in Appendix 1 are Figures 2 and 5 with the changes marked in red pen. Assuming the changes are satisfactory, Appendix 2 includes the drawings with the changes.

In Figure 2, "38" has been moved.

In Figure 5, "hight light" has been changed to -high light-.